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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,339	01/18/2002	Santosh C. Lolayekar	MARA-01006US0 SBS	6530
28554	7590	06/10/2005	EXAMINER	
VIERRA MAGEN MARCUS HARMON & DENIRO LLP 685 MARKET STREET, SUITE 540 SAN FRANCISCO, CA 94105			LIN, WEN TAI	
			ART UNIT	PAPER NUMBER

2154

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,339

Applicant(s)

LOLAYEKAR ET AL.

Examiner

Wen-Tai Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/28/03 - 144903</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-44 are presented for examination.
2. Applicant is reminded to update all the copending applications' series numbers listed on page 1 of the specification.
3. Claims 3, 15, 17, 37 and 44 are objected to because it is not clear under what time frame is "the number of packets" collected. That is, is it measured per unit of time, or for the entire session of the connection, or relating to the number of concurrent requests?
4. Claims 9-15 and 38-44 are objected to because the term "the actual bandwidth" appears to lack antecedent basis in claims 9, 14-15, 38 and 44.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 25-27, 30, 33 and 35-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Guha et al. [U.S. 20020194324].

7. As to claim 1, Guha teaches the invention as claimed including: a method for use in a storage network, the storage network including at least one initiator and at least one storage device [Abstract; Fig.1], the method comprising:

providing quality of service to the initiator for accessing the storage device in the storage network [34, Fig.3].

8. As to claim 2, Guha further teaches that:

the storage network further includes a switch [e.g., 34-38, Figs. 4 & 6];

the initiator and the storage device are both in communication with the switch [Abstract; e.g., 1, 5, Fig.1]; and

the switch performs the step of providing quality of service in the storage network [paragraph 15].

9. As to claims 25-27, Guha teaches the invention as claimed including: a switch for use in a storage network [e.g., 34-42, Fig.4; paragraph 63] comprising:

a port to be coupled to an external device, wherein the external device includes at least one of an initiator and a storage device [64, Fig.6];

a bandwidth controller [e.g., 34-40, Fig.4; paragraph 68],

wherein the bandwidth controller includes a processor [e.g. 39-40, Fig.4]; a traffic manager [e.g., 34, Fig.4]; and a buffer [note that a buffer must have existed in order to performing the tasks described at paragraphs 68-69].

10. As to claims 30, 33 and 35-37, since the features of these claims can also be found in claims 1-2 and 25-27, they are rejected for the same reasons set forth in the rejection of claims 1-2 and 25-27 above.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3-24, 29, 31-32, 34 and 38-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guha et al.(hereafter "Guha") [U.S. 20020194324], as applied to claims 1-2, 25-27, 30, 33 and 35-37 above, further in view of Choudhury et al.(hereafter "Choudhury") [U.S. 5719854].

13. As to claims 3-5, Guha teaches that the step of providing quality of service by applying QoS enforcer rules, which includes dropping or delaying a content request based on the service

level associated with each individual SLA and the existing loading [e.g., paragraphs 20 and 68-69]. Guha does not specifically teach controlling the number of packets or concurrent requests (i.e., the traffic load caused by the requestor) from the initiator to the storage device.

However, in the same field of endeavor Choudhury teaches controlling the number of concurrent requests sent from an initiator as an indication of network traffic caused by the initiator [Abstract; note that since each request only occupies one packet, thus the number of packets during a limited duration is equivalent to the number of active requests].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the number of packets or concurrent requests sent out from the initiator as a measure of traffic load (caused by the initiator) and determine whether the request would be granted based on the initiator's SLA service level because Guha's system deals with constrained resources with an attempt to balancing traffic load and offering differentiated services based on each requestor's SLA [paragraph 9].

14. As to claims 6-8, Guha does not specifically teach that the step of providing quality of service includes adjusting the number of requests allowed the initiator to keep the bandwidth utilized by the initiator within a specified range.

However, in the same field of endeavor, Choudhury teaches that customer's requests is bounded by and upper and lower bounds in accordance with the customer's QoS agreement, wherein these bounds are mapped to maximum and minimum resource capacities that can be used by the customer [col.8, lines 36-63; col.14, lines 13-16] and wherein the resource capacity may be measured as the available bandwidth in the associated resource [col.2, lines 20-29],

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wherein the actual bandwidth is measured by a number of requests per second times an average size of requests from the initiator (i.e., the expected capacity used – see col.14, lines 13-16]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Guha and Choudhury by adjusting the initiator's use of the network bandwidth to within a specified range (i.e, within a predetermined minimum and maximum bounds) because controlling the bandwidth utilization range is an effective way of controlling the initiator's traffic load, which obviously corresponds to the number of concurrent requests times the average size of each request from the initiator and is directly tied to the Guha's service grade, as part of the initiator's QoS agreement.

15. As to claim 9, since the features of this claim can also be found in claims 1-8, it is rejected for the same reasons set forth in the rejection of claims 1-8 above.

16. As to claim 15, Guha and Choudhury does not specifically teach that measuring the actual bandwidth includes determining if a buffer includes a number of packets beyond a specified threshold.

However, it is well known in a traffic route with a buffer for temporary storage of transferred packets the level of the buffer is proportional to the actual bandwidth utilized. Thus it is obvious to one of ordinary skill in the art to use buffered data upper and lower levels as means of measuring the average bandwidth utilization because measuring the buffer level could naturally average out the burst nature of network traffic.

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17. As to claims 10-14 and 16, since the features of these claims can also be found in claims 1-9, they are rejected for the same reasons set forth in the rejection of claims 1-9 above.

18. As to claim 20, Guha teaches that the targets are virtual targets [paragraph 60; i.e., the virtual storages].

19. As to claims 17-19 and 21-22, since the features of these claims can also be found in claims 1-16, they are rejected for the same reasons set forth in the rejection of claims 1-16 above.

20. As to claim 24, Choudhury teaches that the number of requests allowed the initiator is the number of concurrent requests allowed the initiator [col.6, lines 34-39; col.11, lines 14-25].

21. As to claims 23, 29, 31-32, 34 and 38-44, since the features of these claims can also be found in claims 1-22, 24-27, 30 and 33-37, they are rejected for the same reasons set forth in the rejection of claims 1-22, 24-27, 30 and 33-37 above.

22. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guha et al.(hereafter "Guha")[U.S. 20020194324], as applied to claims 1-27 and 29-44 above.

23. As to claim 28, Guha does not specifically teach that the port and the bandwidth controller are on one of a plurality of linecards in the switch, wherein each linecard includes a respective port and a respective bandwidth controller.

However, it is well known in the art that a wide variety of network management subsystems can be implemented on linecards.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that Guha's bandwidth controller may also be implemented on a linecard because this form of implementation makes it rather easy to expand or upgrade the functionalities of the controller.

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Lumelsky et al.	[U.S. 6466980];
Pothapragada et al.	[U.S. 6389432];
Lumelsky et al.	[U.S. 6463454];
Jindal et al.	[U.S. 6324580];
Bhaskaran et al.	[U.S. 6266335];
Mogul et al.	[U.S. 6097882]; and
Gifford et al.	[U.S. 6052718].

Conclusion

Examiner note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from

the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the contest of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Tai Lin whose telephone number is (571)272-3969. The examiner can normally be reached on Monday-Friday (8:00-5:00) .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571)272-3964. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:


(703)872-9306 for official communications; and

(571)273-3969 for status inquiries draft communication.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Tai Lin

May 23, 2005


5/23/05